

Aerial Detection Survey Update

Background: Annual aerial detection surveys for tree mortality and injury have been conducted annually since 1994. This is an update of survey status for the 2014 season.

Objective: Detect and map tree mortality and damage in California / USFS Region 5, and to monitor sudden oak death in Humboldt County.

Surveyors: Z. Heath, J. Moore, Y. Valachovic, L. Morgan

Date: September 8 - 11, 2014

Methodology: Recently dead and damaged trees (still retaining dead foliage) were mapped visually by surveyors using digital aerial sketch-mapping systems, flying in a light fixed-wing aircraft approximately 1,500 feet above ground level. Surveyors record the number and species of affected trees and type of damage (mortality, defoliation, etc.) at each mapped location.

Details:

- Over 3.7 million acres were surveyed, covering portions of the Shasta-Trinity and Klamath National Forests and Redwood National Park, and parts of Humboldt, Lake and Napa Counties. See Figures 1a and 1b.
- Large areas of active mountain pine beetle-related mortality was observed north of Mount Shasta. This area was observed last year and mortality has increased since then.
- On the rest of the Shasta-Trinity National Forest, mortality in the areas surveyed consisted of western pine beetle and fir engraver, with some large areas of knobcone pine as well. Figure 2.
- Mostly true fir mortality and damage from *Cytospora* was observed on the west side of the Klamath National Forest. A large part of the Klamath was not mapped due to the June and Happy Camp fires. Figure 3.
- The flight over Humboldt County revealed a few new locations of tanoak mortality that are potentially from sudden oak death. However, none of those sites were very far from known areas of infestation. One of the new locations was located in Redwood National Park, downstream from a known infestation on the Park.
- Ferry flights over the Sacramento River, Putah Creek and Cache Creeks also showed hardwood mortality in many of the riparian areas. Figure 4 to 6.
- Large areas of oak defoliation due to the drought conditions were observed east of Redding and Red Bluff.

Figure 1a: Northern flown area and mapped tree mortality and damage

Figure 1b: Southern flown area and mapped tree mortality and damage

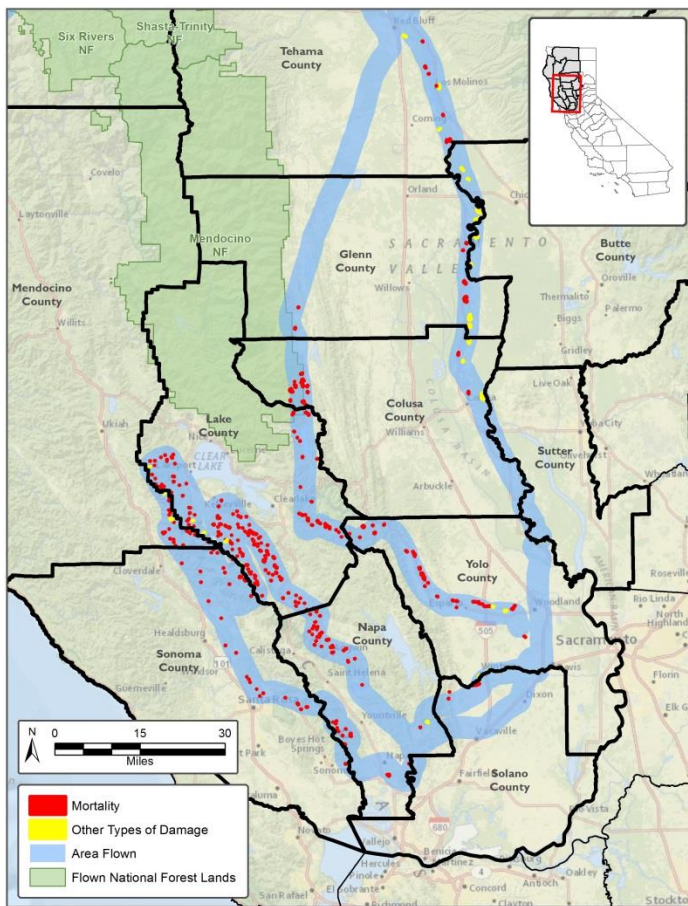
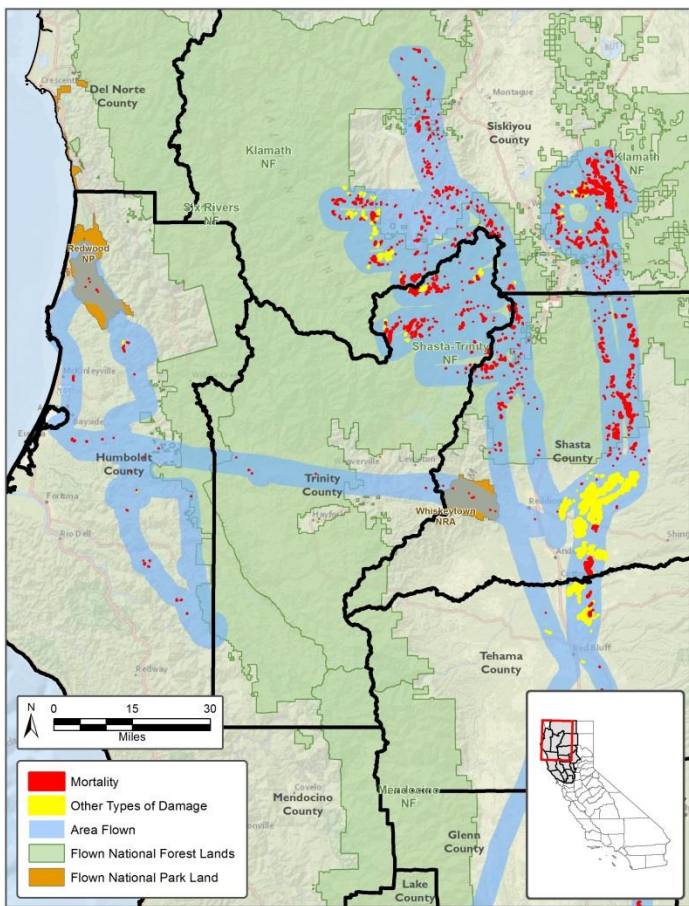




Figure 2. Knobcone pine mortality on the Shasta-Trinity National Forest.



Figure 3. Severe flagging of red fir from *Cytospora* in the Marble Mountains, Klamath National Forest.



Figure 4. Mortality along Putah Creek, Yolo County.

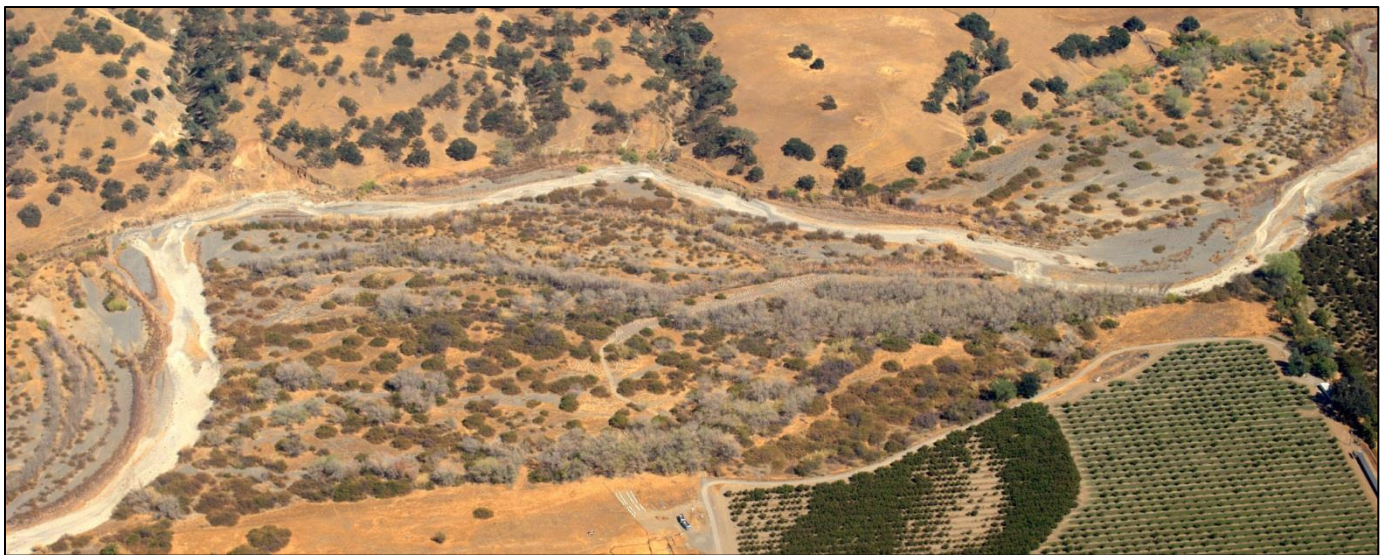


Figure 5. Mortality along Cache Creek, Yolo County.



Figure 6. Mortality of riparian vegetation along the Sacramento River, Glenn County.

Direct questions pertaining to this report to Zachary Heath (email: zheath@fs.fed.us phone: 530-759- 1751). Report Date Sept 23, 2014.

The U.S. Department of Agriculture (USDA) prohibits discrimination in all its programs and activities on the basis of race, color, national origin, age, disability, and where applicable, sex, marital status, familial status, parental status, religion, sexual orientation, genetic information, political beliefs, reprisal, or because all or part of an individual's income is derived from any public assistance program. (Not all prohibited bases apply to all programs.) Persons with disabilities who require alternative means for communication of program information (Braille, large print, audiotape, etc.) should contact USDA's TARGET Center at (202) 720-2600 (voice and TDD). To file a complaint of discrimination, write to USDA, Director, Office of Civil Rights, 1400 Independence Avenue, S.W., Washington, D.C. 20250-9410, or call (800) 795-3272 (voice) or (202) 720-6382 (TDD). USDA is an equal opportunity provider and employer.